

In the Claims:

Claims 1-36 (cancelled).

Claim 37 (new) A fuel concentration increasing device for increasing the concentration of a fuel in a liquid mixture of a fuel and a carrier component comprising:

at least one fuel storage device in which the fuel is storable; and
at least one throughflow device which is disposed at least partially in the fuel storage device for conducting the mixture of fuel and carrier component through the fuel storage device, wherein the throughflow device contains at least one membrane which is permeable or semi-permeable for the fuel but not for the carrier component or comprising such a membrane so that, because of the transport properties of the membrane, fuel can be added passively to the liquid mixture of fuel and carrier component.

Claim 38 (new) The device according to claim 37, wherein the device is disposed on a fuel cell and/or has a fuel exchange connection to a fuel cell for exchanging the mixture of fuel and carrier component.

Claim 39 (new) The device according to claim 37, wherein the fuel cell is a direct methanol fuel cell.

Claim 40 (new) The device according to claim 37, wherein the fuel cell comprises a cathode, and water produced on the cathode of the fuel cell can be coupled into the mixture of fuel and carrier component.

Claim 41 (new) The device according to claim 37, wherein a heating device is disposed on the device in order to heat fuel stored in the fuel storage device and/or the mixture of fuel and carrier component and/or in that the device is connected thermally or physically to a fuel cell.

Claim 42 (new) The device according to claim 37, wherein heat insulation is integrated in the fuel storage device or disposed thereon.

Claim 43 (new) The device according to claim 42, wherein the heat insulation contains or comprises insulating material and/or in that the heat insulation has walls together with a vacuum situated therebetween.

Claim 44 (new) The device according to claim 37, wherein the mixture of carrier component and fuel can be conducted through the throughflow device more than once for a multiple increase in the concentration of the fuel in the mixture.

Claim 45 (new) The device according to claim 37, wherein the fuel storage device contains or comprises a container and/or a tank.

Claim 46 (new) The device according to claim 37, wherein the fuel storage device contains fuel in pure or in concentrated form.

Claim 47 (new) The device according to claim 37, wherein the fuel storage device contains fuel in a carrier component, the fuel being present in 50 to 100 per cent concentration.

Claim 48 (new) The device according to claim 37, wherein at least one support device and/or stabilizing device is disposed in the fuel storage device.

Claim 49 (new) The device according to claim 48, wherein at least one of the disposed support or stabilizing devices contains or comprises foamed material.

Claim 50 (new) The device according to claim 37, wherein the membrane comprises a perfluorosulphonic acid/polytetrafluoroethylene copolymer in acidic (H^+) form.

Claim 51 (new) The device according to claim 37, wherein the throughflow rate for the mixture of carrier component and fuel through the throughflow device has an order of magnitude in the range of 0.1 ml/min to 1000 ml/min.

Claim 52 (new) The device according to claim 37, wherein a support device is disposed on or around the throughflow device in order to achieve an arbitrary spatial orientation of the throughflow device.

Claim 53 (new) The device according to claim 52, wherein the support device comprises foamed material.

Claim 54 (new) The device according to claim 37, wherein the throughflow device comprises at least one channel.

Claim 55 (new) The device according to claim 54, wherein the channel has a circular cross-section.

Claim 56 (new) The device according to claim 37, wherein at least one filter is disposed in the throughflow device.

Claim 57 (new) The device according to claim 37, wherein the carrier component and/or the fuel comprises a liquid.

Claim 58 (new) The device according to claim 37, wherein the carrier component comprises water, water vapor and/or a mixture thereof with further materials.

Claim 59 (new) The device according to claim 58, wherein the carrier component comprises an acid.

Claim 60 (new) The device according to claim 37, wherein the fuel comprises an alcohol.

Claim 61 (new) The device according to claim 60, wherein the fuel comprises methanol and/or ethanol.

Claim 62 (new) A fuel concentration increasing method for increasing the concentration of a fuel in a liquid mixture of a fuel and a carrier component, wherein at least one throughflow device is disposed at least partially in a volume filled with fuel, comprising:

conducting the mixture of fuel and carrier component through the at least one throughflow device which comprises a membrane which is permeable or semi-permeable for the fuel but not for the carrier component so that, because of the transport properties of the membrane, fuel is added passively from the volume of the mixture of the fuel and the carrier component.

Claim 63 (new) The method according to claim 62, wherein a fuel concentration device is used, the fuel concentration device comprising:

at least one fuel storage device in which the fuel is storable; and
at least one throughflow device which is disposed at least partially in the fuel storage device for conducting the mixture of fuel and carrier component through the fuel storage device, wherein the throughflow device contains at least one membrane which is permeable or semi-permeable for the fuel but not for the carrier component or comprising such a membrane so that, because of the transport properties of the membrane, fuel can be added passively to the liquid mixture of fuel and carrier component.

Claim 64 (new) The method according to claim 62, wherein the mixture of fuel and carrier component is conducted through the throughflow device more than once for multiple increase in the concentration of the fuel in the mixture.

Claim 65 (new) The method according to claim 62, wherein the mixture of fuel and carrier component is conducted to an anode of a fuel cell after the increase in the concentration.

Claim 66 (new) The method according to claim 62, wherein water produced on a cathode of a fuel cell is re-used in that it is introduced into the mixture of fuel and carrier component.

Claim 67 (new) The method according to claim 62, wherein the fuel and/or the mixture of fuel and carrier component and/or the carrier component are heated.

Claim 68 (new) The method according to claim 62, wherein the mixture of carrier component and fuel is filtered before and/or after being conducted through the throughflow device.

Claim 69 (new) A method of utilizing the device according to claim 62, comprising modifying the fuel supply flow to the anode of a fuel cell.

Claim 70 (new) The method according to claim 69, wherein the fuel cell is a direct methanol fuel cell.